ENTOMOLOGY.[1]

On a Small Collection of Coleoptera from the High Mountains of British Columbia.—A small series of Coleoptera furnished the writer by Messrs A. G. Smith and F. Russell is of interest sufficient to deserve notice; the collection was made near Donald, B. C., on the top of the first range of mountains to the northeast and above the base of the snow line. Some of the beetles are circumpolar species, others are melanistic forms of those found in more favored situations. A list of them with remarks is appended:

Carabus oregonensis Lec.

One specimen of the insect was taken; it is darker than those found on the coast and somewhat smaller.

Nebria sahlbergii Fisch.

Numerous specimens of small size and with rather dark legs. This seems to have been the most common beetle on the mountain, and is characteristic of boreal or mountainous districts; it extends from the White Mountains of New Hampshire to Alaska, and Dr. Hamilton writes that he has it from the Coast Range of the south of California.

Bembidium incertum Mots.

One specimen; this is reported from Sitka, Alaska.

Pterostichus riparius Dej.

Four specimens; these are a little smaller than those from the coast of Southern Alaska, but about the same as a number from the Stikine River of British Columbia. It has been reported from Gray's Peak, Colo., at an elevation of 12,000 feet. Dejean described it from our northwest coast in 1828 (Species General des Coleopteres, iii, 333).

Amara remotestriata Dej.

Three specimens were brought from the mountain top. It occurs in mountainous and northern regions of our continent.

Harpalus innocuus Lec.

Two specimens of this species are very black, but present no other difference.

Hippodamia 5-signata Kirby.

A series of five specimens show great variation in size and color the smallest one being also the darkest. One of them is remarkable

[1]This department is edited by Clarence M. Weed, Hanover, N. H.

in that the thorax has a large, perfectly regular fovea on each side near the middle.

Hippodamia convergens Guer.

One specimen showing nothing of interest.

Coccinella transversoguttata Fabr.

One specimen of an ordinary type. Widely distributed in North America, and occurs also in Northern Europe and Asia.

Psyllobora 20-*maculuta* Say.

A specimen of this species is the most thoroughly melanized of any seen. All of the elytral spots, excepting the sub-apical, are more or less confluent, forming two irregular vittæ—one near the suture, the other discal. This would go under the variety *tædata* Lec., but is larger than typical 20-*maculata* instead of being smaller, as is usual with that variety.

Byrrhus kirbyi Lec.

One specimen.

Byrrhus cyclophorus Kirby.

Two specimens. This and the preceding species are northern or montane in habit.

Buprestis lanta Lec.

One specimen.

Podabrus xanthoderus Lec.

Four specimens of a *Podabrus* which agree with Dr. Leconte's short description of his variety *a* (Trans. Amer. Ento. Soc., ix, p. 48), are referred here. The mandibles and sides of the head are yellow, as are also the antennal tubercles and the first two joints of the antennæ. One specimen (possibly a distinct species) has the thorax entirely black, except a very narrow margin on the sides in front of the middle; it is also a little less in size, but seems to agree in other characters.

Aphodius ursinus Mots.

Two specimens of this fine insect are in the lot. It is a black variety of *aleutus*, according to the latest researches and is known from Colorado (Dr. Horn, Trans. Amer. Ento. Soc., xiv, p. 13) and from Kamtschatka. Compared with examples of *aleutus* from Southern Alaska these latter are only about half as large.

Aphodius granarius Linn.

Four rather large specimens. This species is found over nearly all of North America and the rest of the civilized world.

Aphodius congregatus Mann.

One specimen of the variety with testaceous elytra.

Acmœops proteus Kirby.

A specimen of this variable species is almost exactly like one from Ottawa, Canada.

Syneta albida Lec.

One specimen. The suture is narrowly dark, the thorax and head also quite dark. The species of *Syneta* vary in color and it is quite unnecessary to erect new species on such characters until the extent of this variation is more definitely known.

Gonioctena arctica Mann.

Four specimens of this interesting species were taken, two of them nearly typical, differing from Mannerheim's description (Bulletin de la Societe Imp. des Naturalistes des Moscow, 1853, p. 166) only in the absence of the pale thoracic borders and dorsal line. The remaining two show both of these markings very well, but differ from each other in minor particulars. As the species is rare in American collections I

FIG. 1.

have prepared the accompanying figure, which will give some idea of the color variations exhibited even by a small set. This species is known from Northern Alaska, the Nelson and Churchill Rivers and from Arctic Siberia southward to the Amur, according to Dr. Hamilton, from whose valuable paper (Trans. Amer. Ento. Soc., xvi, p. 88 *et seq.*) much of the distribution herein quoted is derived.

Serropalpus barbatus Schall.

One specimen occurs "from Maine to Alaska, Central and Western Europe, Western and Eastern Siberia." (Hamilton.)

H. F. WICKHAM, Iowa City, Iowa.

A Peculiar Seed-Like Case-Worm from the Grand Canyon.—While collecting in the Grand Canyon, July 8 to 11, 1892, the members of our party frequently found themselves covered with num-

bers of very small, thin, seed-like bodies, which became attached to their arms, hands, clothing, and faces. Examination proved these to be the cases of a very small larva, which lived within. They were afterward observed to be very common on the narrow-leafed willows (*Salix* sp.), a round-leafed species of leguminous tree, and on many, other plants. They were usually found on the edges of leaves, the

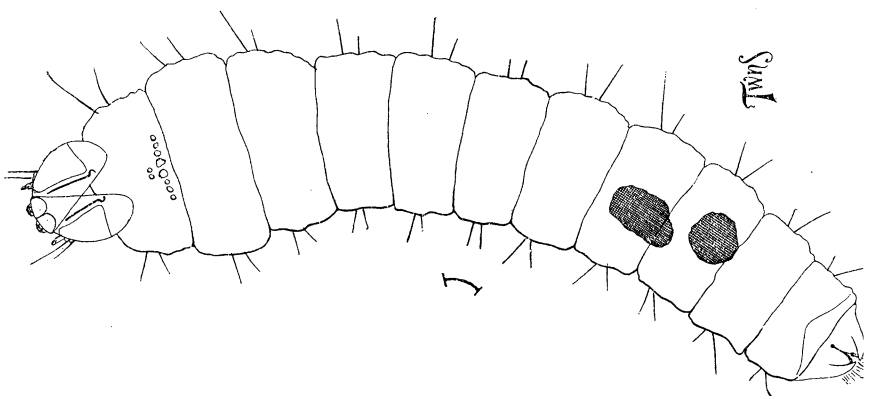

Fig. 2.—Larva, dorsal view—much enlarged. (Hair line shows natural size.)

case being attached thereto by a few extremely fine strands of silk. They occurred especially on the *Salix*, and were found at 2500 feet and more below the rim.

An examination of this larva proves it to be lepidopterous. It has not been bred, but the description of the larva and case given below, together with the figures, will serve to identify it. It is peculiar as exhibiting no trace of legs or prolegs, yet it is unmistakably lepidopterous.

Description of Larva.—Body 13-jointed, whitish, very sparsely clothed with weak hairs; head and second segment with anal hooks, somewhat rufous. Head narrower than second segment, a little more than one-half as wide, subcircular in outline from above, widely and deeply notched behind; two small approximated simple eyes on extreme outer anterior edge of lateral dorsal plates of head just back of antennæ, the anterior one slightly larger than the posterior. Antennæ small, short, 3-jointed; first joint stout, a little longer than wide, with terminal bristles on outer edge; second joint very small and short; third joint a little narrower and longer than second, coming to a point at tip. Mandibles stout, narrowed and twice-notched

(3-toothed?) apically. First pair of maxillæ 3-jointed, joints about equal in length, basal joint stoutest, second and third joints decreasing in width; two pairs of palpi springing from inner side of basal joint, these palpi apparently also 3-jointed, joints of equal length, basal stoutest, second and third successively narrowed. Second pair of maxillæ with one pair of palpi, these palpi apparently 2-jointed, first joint moderately narrow, terminal joint elongate, bristle-like, tapering to a

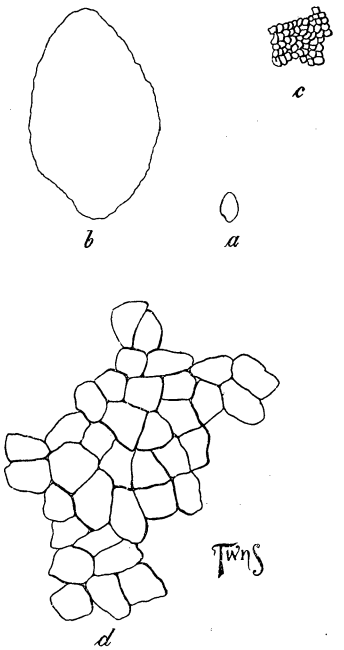

Fig. 3.—*a*, case—natural size; *b*, case—enlarged; *c*, portion of case—enlarged; *d*, portion of case—greatly enlarged.

point; spinneret 3-jointed, joints sub-equal in length, basal joint stout, terminal joint pointed. Second segment corneous, with a transverse row of about eight roundish markings near posterior margin, and a median pair just anterior to row. Other segments fleshy, the integument of all segments except head microscopically warted, in the present alcoholic specimen much wrinkled, especially on third segment; third segment somewhat wider than second, fourth a little narrower, segments 5 to 10 about same width, 11 to 12 nearly as wide; segments 2 to 12 subequal in length. Thirteenth or anal segment narrowed, shortened, longitudinally bifid on the median line posteriorly, fur-

nished with a pair of curved claw-like corneous hooks springing from sides of ventral surface, their tips closing on each other posteriorly. (Ninth and tenth segments each with a black circular or oblong contained body.) Spiracles showing on eleventh and twelfth segments as small nearly circular openings about the middle of segment near lateral margin, not apparent on other segments. No indication of true thoracic legs or of prolegs.

Length of larva (slightly curved as in drawing), $2\frac{3}{5}$ mm.; width of third segment (second from head), about $\frac{3}{5}$ mm.

Description of Case.—Case is small, seed-like in shape, very flat and thin, a little longer than wide, pale brownish in color, composed of two thin layers sub-oval in outline, glued together on edges, narrowly separated or free at one end, the larva living between the layers. Under the microscope a single layer presents a reticulated structure, appearing as if uniformly made up of very small irregular pieces of nearly equal size. It is apparently composed of vegetable tissue, probably very minute fragments of leaves.

Length of case, about $3\frac{1}{2}$ mm.; greatest width 2 mm., or hardly more.

C. H. Tyler Townsend.

Entomological News.—At the meeting of the American Association of Agricultural Colleges and Experiment Stations held in New Orleans, Nov. 15 to 18, Chairman Lawrence Bruner, of Nebraska, and Secretary F. M. Webster, of Ohio, of the Entomological Section, were reelected for another year. But few entomologists were in attendance at the meeting, most of the Station entomologists seeming to prefer the Association of Economic Entomologists for the presentation of papers in reference to their work. The report of the Chairman of the Section of Entomology, Prof. Lawrence Bruner, was read by Prof. Osborn. The report largely consisted in a statement of the equipment of the Station entomologists as a whole, to which was added a statement in detail of the entomological equipment of each station having an entomologist. The report showed that while some of the stations were well equipped with laboratory, insectary, and other requirements for work, yet there were many stations which had not given entomologists proper equipment. Some of the Station entomologists lack room for laboratory, others library, and many, microscopes. Valuable results of a practical as well as a scientific nature are rarely attained without proper apparatus, and the Station entomologists need something more than jack-knives with which to carry on their work.

It is gratifying to learn of the advancement being made by many of the entomologists of the experiment stations. Prof. H. A. Morgan, of Louisiana, and Prof. Popenoe, of Kansas, who were formerly entomologists and horticulturists of their respective stations, have, upon their urgent request, been made entomologists of their stations only. This is a step in the right direction.

Prof. John B. Smith will have charge of the entomological part of the biological exhibit of the office of experiment stations at the World's Columbian Exposition.

Howard Evarts Weed, of the Mississippi Agricultural College is making a special study of North American Myriopods, and would be glad to exchange insects of any order for Myriopods of any locality, especially the west. His address is Agricultural College, Mississippi.

Prof. C. H. T. Townsend is preparing a monograph of North American Tachinidæ, and desires material in this family from any locality, especially bred specimens. His address is Las Cruces, New Mexico.

A recent issue of *Psyche* says: "Entomologists everywhere will regret to hear that the serious illness which has, for the past two years, incapacitated Dr. H. A. Hagen, renders it improbable that he will be able to do any further work. Dr. Hagen has had charge of the collections of insects in the Museum of Comparative Zoology at Harvard University since Oct. 12, 1867, and during this long period of twenty-five years has applied himself with entire devotion to the interests of the department. The scientific value and present excellent condition of the collections are the result of his faithful and disinterested work. Recently the department has been placed in charge of Mr. Samuel Henshaw."

Dr. M. C. Cooke, the well-known English mycologist, has brought together an account of the fungi parasitic upon insects in a volume recently published by the Society for Promoting Christian Knowledge (London, 1892).

We learn from *The Entomologists Monthly Magazine* that Mr. Oswald Latter reported at a recent meeting of the London Entomological Society that the moth *Dicranura vinula* produces, probably from the mouth, a solution of caustic potash for the purpose of softening the cocoon.

An interesting summary of the value of entomological study has been sent out by Mr. James Fletcher in the report of his Evidence before the Committee on Agriculture of the Canadian House of Commons.